CLAIMS

1. A shaft sealing assembly with a pumping device for sealing a fluid at a space between a housing and a rotatable shaft, comprising:

a sealing means comprising;

a seal ring unit, coaxially surrounding said shaft within said housing and arranged for movement axially relative to said shaft under a resilient pressure;

a counter ring unit, coaxially surrounding said shaft within said housing and prevented from axial movement relative to said shaft when in operating position;

each of said ring units having an end face for mutual engagement under said resilient pressure to form a seal, one of said ring units being mounted for rotation with said shaft at least one of said end faces having a surface profile to act on a sealed fluid between said end faces; and

a pumping means, positioned concentrically with said shaft and within said housing and positioned between said space and said sealing means for vaporizing of a liquid portion of said fluid.

2. A sealing assembly according to claim 1 where said pumping means comprises a threaded internal cylindrical surface of a member and is mounted concentrically within said housing.

3. A sealing assembly according to claim 1 where said pumping means comprises a threaded external cylindrical surface of a member mounted for rotation with said shaft.

4. A sealing assembly according to claim 2 where said pumping means comprises a threaded external cylindrical surface of a member mounted for rotation with said shaft.

5. A sealing assembly according to claim 1 where said surface profile on one of said end faces is a plurality of helical grooves.

6. A sealing assembly according to claim 1 where said

housing comprises a port near said sealing means, said port connected to communicate with an external gas source by means of a one-way valve, said valve preventing outflow of said sealed fluid.